

The Accreditation Council for Graduate Medical Education



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Pathology Milestones

The Milestones are designed only for use in evaluation of resident in the context of their participation in ACGMEaccredited residency programs. The Milestones provide a framework for the assessment of the development of the resident in key dimensions of the elements of physician competency in a specialty or subspecialty. They neither represent the entirety of the dimensions of the six domains of physician competency, nor are they designed to be relevant in any other context.

Pathology Milestones

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American Board of Pathology

Program Directors Section (PRODS) of APC

ACGME Pathology Review Committee

American Association of Colleges of Osteopathic Medicine

Association of American Medical Colleges

Resident Forum Executive Committee - CAP

Understanding Milestone Levels and Reporting

This document presents the Milestones, which programs use in a semi-annual review of resident performance, and then report to the ACGME. Milestones are knowledge, skills, attitudes, and other attributes for each of the ACGME Competencies organized in a developmental framework. The narrative descriptions are targets for resident performance throughout their educational program.

Milestones are arranged into levels. Tracking from Level 1 to Level 5 is synonymous with moving from novice to expert resident in the specialty or subspecialty. For each reporting period, the Clinical Competency Committee will review the completed evaluations to select the milestone levels that best describe each learner's current performance, abilities, and attributes for each subcompetency.

These levels *do not* correspond with post-graduate year of education. Depending on previous experience, a junior resident may achieve higher levels early in his/her educational program just as a senior resident may be at a lower level later in his/her educational program. There is no predetermined timing for a resident to attain any particular level. Residents may also regress in achievement of their milestones. This may happen for many reasons, such as over scoring in a previous review, a disjointed experience in a particular procedure, or a significant act by the resident.

Selection of a level implies the resident substantially demonstrates the milestones in that level, as well as those in lower levels (see the diagram on page v).

Additional Notes

Level 4 is designed as a graduation *goal* but *does not* represent a graduation *requirement*. Making decisions about readiness for graduation and unsupervised practice is the purview of the program director. Furthermore, Milestones 2.0 include revisions and changes that preclude using Milestones as a sole assessment in high-stakes decisions (i.e., determination of eligibility for certification or credentialing). Level 5 is designed to represent an expert resident whose achievements in a subcompetency are greater than the expectation. Milestones are primarily designed for formative, developmental purposes to support continuous quality improvement for individual learners, education programs, and the specialty. The ACGME and its partners will continue to evaluate and perform research on the Milestones to assess their impact and value.

Examples are provided for some milestones within this document. Please note: the examples are not the required element or outcome; they are provided as a way to share the intent of the element.

Some milestone descriptions include statements about performing independently. These activities must occur in conformity to ACGME supervision guidelines as described in the Program Requirements, as well as to institutional and program policies. For example, a resident who performs a procedure independently must, at a minimum, be supervised through oversight.

A Supplemental Guide is also available to provide the intent of each subcompetency, examples for each level, assessment methods or tools, and other available resources. The Supplemental Guide, like examples contained within the Milestones, is designed only to assist the program director and Clinical Competency Committee, and is not meant to demonstrate any required element or outcome.

Supplemental Guides and other resources are available on the Milestones page of each specialty section of the ACGME website. On www.acgme.org, choose the applicable specialty under the "Specialties" menu, then select the "Milestones" link in the lower navigation bar.

The diagram below presents an example set of milestones for one sub-competency in the same format as the ACGME Report Worksheet. For each reporting period, a resident's performance on the milestones for each sub-competency will be indicated by selecting the level of milestones that best describes that resident's performance in relation to those milestones.

Level 1	3: Physician Role in Health Level 2	Level 3	Level 4	Level 5
Identifies key components of the complex healthcare system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex healthcare system are inter-related, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., test utilization, turn-around time)	Manages various components of the complex healthcare system to provide efficient and effective patient care and transition of care	Advocates for or leads systems change that enhances high value, efficient and effective patient care and transition of care
Describes basic health payment systems, including (e.g., government, private, public, uninsured care) and practice models	Documents testing detail and explains the impact of documentation on billing and reimbursement	Engages with clinicians and/or patients in shared- decision making, such as use of preauthorization for complex testing	Practices and advocates for cost effective patient care with consideration of the limitations of each patient's payment model	Participates in health policy advocacy activities
Comments:			Not Yet	Completed Level 1
Selecting a response box in the middle of a level implies that milestones in that level and in lower levels have been substantially demonstrated.		betwee in low demo	cting a response box een levels indicates the ver levels have been constrated as well as s tones in the higher le	nat milestones substantially ome

Level 1	Level 2	Level 3	Level 4	Level 5
Identifies the key elements of a report and demonstrates understanding of timely reporting	Generates a timely report for a simple case, with assistance	Generates a timely report that includes synoptic templates and/or ancillary testing for a complex case, with assistance; independently generates reports for a simple case	Independently generates timely integrated reports for complex cases	Independently generates a nuanced report that expresses the ambiguity and uncertainty for a complex case
Identifies the importance of a complete pathology report for optimal patient care	Identifies implications of the diagnosis in the report and makes simple recommendations	Generates an amended/addended report that includes updated information, with assistance Generates a report that includes the language of uncertainty, as appropriate, with assistance	Generates an amended/addended report and documents communication with the clinical team, as appropriate Independently generates a report that includes the language of uncertainty and complex recommendations	

Patient Care 2: Grossing (AP)					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies the importance of grossing and uses appropriate resources	Samples and documents simple cases, with assistance	Triages, samples, and documents complex cases, with assistance; independently triages, samples, and documents simple cases	Independently triages, samples, and documents complex cases	Applies innovative approaches of grossing to demonstrate optimal pathology in unique specimens	
Maintains specimen integrity to avoid sample misidentification	Identifies specimen integrity issues (e.g., fixation, floaters, clinical pathologic correlation with operating room reports)	Resolves specimen integrity issues, with assistance	Independently resolves specimen integrity issues, as needed	Serves as an expert for gross examination	
Identifies the need for time management	Needs assistance to handle workload	Handles assigned workload with minimal to no assistance	Efficiently finishes own workload and assists others as needed		
Comments: Not Yet Completed Level 1 Not Yet Rotated					

Patient Care 3: Clinical C	onsultation, including On-	Call Interactions (AP/CP)				
Level 1	Level 2	Level 3	Level 4	Level 5		
Describes the utility of a consultation and lists available resources useful in consultation	For simple consultations, delineates the clinical question, obtains appropriate additional clinical information, accesses available resources, recommends next steps, and documents appropriately with assistance	For complex consultations, delineates the clinical question, obtains appropriate additional clinical information, applies relevant resources, and recommends next steps with assistance; manages simple consultations independently	Manages complex consultations independently	Recognized as an expert in providing comprehensive consultations		
Comments:	Comments: Not Yet Completed Level 1 Not Yet Rotated					

Level 1	Level 2	Level 3	Level 4	Level 5
Discusses importance of diagnoses and test results in patient care	Identifies pertinent test results and correlates to clinical findings to develop a differential diagnosis	Consistently integrates test results with clinical findings to refine differential and propose a diagnosis		Is an expert diagnostician
Identifies normal states and reference ranges	Distinguishes normal from abnormal findings	Identifies confounding factors, artifacts, and preanalytic issues	Gives consideration to confounding factors in formulating an interpretation(s) and diagnoses	
Describes indications for common tests	Proposes appropriate initial tests	Proposes and interprets ancillary tests in clinical context	Recommends further work-up using diagnostic algorithms and recommends therapeutic options, as appropriate	Proposes optimal diagnostic and therapeutic strategies based on patterns within a population

Level 1	Level 2	Level 3	Level 4	Level 5
Describes appropriate channels for communication regarding IOC	Assesses requests for simple IOC and plans workflow, with assistance	For complex cases, addresses requests for IOC with assistance; independently assesses and manages requests for simple IOC and plans workflow	For complex cases, independently manages and addresses requests for IOC	Expertly manages all IOC
Discusses specimendependent variability in approach to IOC	Procures tissue for diagnosis and prepares quality slides on simple specimens, with assistance	Procures tissue for diagnosis and prepares quality slides for complex specimens with assistance and independently for simple specimens	Supervises junior residents and advises technical staff members in the performance of IOC	
Demonstrates understanding of utility of IOC	Identifies broad diagnostic categories (i.e., benign versus malignant, normal versus abnormal) in routine IOC	Interprets and communicates routine IOC/FS and correlates with final diagnosis, with assistance	Independently interprets and communicates IOC/FS and correlates with final diagnosis in routine cases and in some complex cases	

Level 1	Level 2	Level 3	Level 4	Level 5
Describes the value of an autopsy	Plans and performs all aspects of routine autopsies, with assistance	Plans and performs all aspects of complex autopsies, with assistance	Independently plans and performs all aspects of complex autopsies in a timely manner	Uses advanced skills and non-routine approaches to unique autopsies
Reviews clinical records and concisely presents clinical data and history; communicates with clinical team	Generates preliminary anatomic diagnosis within accepted turnaround time	Independently generates final report with clinicopathologic correlations on routine autopsies; with assistance, generates final report with clinicopathologic correlations on complex autopsies	Independently generates final report with clinicopathologic correlations on routine and complex autopsies	Uses autopsy data to identify patterns that advance medical knowledge and improve patient care
Properly identifies the decedent and verifies consent and limitations to extent of the autopsy	Adheres to regulations with guidance, such as legal jurisdiction, statutes regarding device reporting and communicable diseases	Independently adheres to regulations	Instructs junior level residents about regulations	

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Medical Knowledge 1: Diagnostic Knowledge (AP/CP)					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates basic medical knowledge of anatomy, cellular, and molecular systems Demonstrates knowledge	Applies anatomic, cellular, and molecular knowledge to identify pathologic processes	Applies advanced knowledge of anatomic, cellular, and molecular pathology to common diagnoses	Integrates advanced knowledge of anatomic, cellular, and molecular pathology to common and uncommon diagnoses	Recognized as an expert in the integration of anatomic, cellular, and molecular pathology knowledge to disease	
of normal histology and cell biology	histology and cell biology				
Comments: Not Yet Completed Level 1 Not Yet Rotated					

Medical Knowledge 2: Clinical Reasoning (AP/CP)					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates a basic framework for clinical reasoning	Demonstrates clinical reasoning to determine relevant information	Synthesizes information to inform clinical reasoning, with assistance	Independently synthesizes information to inform clinical reasoning in complex cases	Demonstrates intuitive approach to clinical reasoning for complex cases	
Identifies appropriate resources to inform clinical reasoning	Selects relevant resources based on scenario to inform decisions	Seeks and integrates evidence-based information to inform diagnostic decision making in complex cases, with assistance	Independently seeks out, analyzes, and applies relevant original research to diagnostic decision making in complex clinical cases		
Not Yet Completed Level 1 Not Yet Rotated					

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of common patient safety events	Identifies system factors that lead to patient safety events	Participates in analysis of patient safety events (simulated or actual)	Conducts analysis of patient safety events and offers error prevention strategies (simulated or actual)	Actively engages teams and processes to modify systems to prevent patient safety events
Demonstrates knowledge of how to report patient safety events	Reports patient safety events through institutional reporting systems (simulated or actual)	Participates in disclosure of patient safety events to clinicians and/or patients and families, as appropriate (simulated or actual)	Discloses patient safety events to clinicians and/or patients and families, as appropriate (simulated or actual)	Role models or mentors others in the disclosure of patient safety events
Demonstrates knowledge of basic QI methodologies and metrics	Describes departmental and institutional QI initiatives	Participates in departmental and institutional QI initiatives	Demonstrates the skills required to identify, develop, implement, and analyze a QI project	Creates, implements, and assesses QI initiatives at the institutional or community level
Comments:				

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of case coordination	Coordinates care of patients in routine cases effectively using interprofessional teams	Coordinates care of patients in complex cases effectively using interprofessional teams	Models effective coordination of patient centered care among different disciplines and specialties	Analyses the process of care coordination and leads in the design and implementation of improvements
Identifies key elements for safe and effective transitions of care and hand-offs	Performs safe and effective transitions of care/hand-offs in routine situations	Performs safe and effective transitions of care/hand-offs in complex situations	Models and advocates for safe and effective transitions of care/handoffs within and across health care delivery systems	Improves quality of transitions of care within and across health care delivery systems to optimize patient outcomes
Demonstrates knowledge of population and community health needs and disparities	Identifies pathology's role in population and community health needs and inequities for their local population	Identifies opportunities for pathology to participate in community and population health	Recommends and/or participates in changing and adapting practice to provide for the needs of communities and populations	Leads innovations and advocates for populations and communities with health care inequities

Systems-Based Practice 3: Physician Role in Health Care System (AP/CP)					
Level 1	Level 2	Level 3	Level 4	Level 5	
Identifies key components of the complex health care system (e.g., hospital, skilled nursing facility, finance, personnel, technology)	Describes how components of a complex health care system are inter-related, and how this impacts patient care	Discusses how individual practice affects the broader system (e.g., test utilization, turnaround time)	Manages various components of the complex health care system to provide efficient and effective patient care and transition of care	Advocates for or leads systems change that enhances high-value, efficient, and effective patient care and transition of care	
Describes basic health payment systems (e.g., government, private, public, uninsured care) and practice models	Documents testing detail and explains the impact of documentation on billing and reimbursement	Engages with clinicians and/or patients in shared decision making, such as use of preauthorization for complex testing	Practices and advocates for cost effective patient care with consideration of the limitations of each patient's payment model	Participates in health policy advocacy activities	
Comments:	Comments: Not Yet Completed Level 1				

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates familiarity with basic technical concepts of hardware, operating systems, databases, and software for general purpose applications	Understands laboratory specific software, key technical concepts and interfaces, workflow, barcode application, automation systems (enterprise systems architecture)	Discusses the role of the pathologist in laboratory initiatives based on integrative pathology informatics and bioinformatics (e.g., laboratory information system implementation and configuration, QI initiatives)	Applies knowledge of informatics skills as needed in laboratory initiatives (e.g., data management and security, computational statistics, information governance)	Participates in operational and strategy meetings, troubleshooting with information technology staff members; able to utilize medical informatics in the direction and operation of the laboratory

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge that laboratories must be accredited	Demonstrates knowledge of the components of laboratory accreditation and regulatory compliance (Clinical Laboratory Improvement Amendments and others), either through training or experience	Identifies the differences between accreditation and regulatory compliance; discusses the process for achieving accreditation and maintaining regulatory compliance	Participates in an internal or external laboratory inspection	Serves as a resource for accreditation at the regional or national level
Discusses the need for quality control and proficiency testing	Interprets quality data and charts and trends, including proficiency testing results, with assistance	Demonstrates knowledge of the components of a laboratory quality management plan	Reviews the quality management plan to identify areas for improvement	Creates and follows a comprehensive quality management plan
		Discusses implications of proficiency testing failures	Performs analysis and review of proficiency testing failures and recommends a course of action, with oversight	Formulates a response for proficiency testing failures

Practice-Based Learning and Improvement 1: Evidence-Based Practice and Scholarship (AP/CP)					
Level 1	Level 2	Level 3	Level 4	Level 5	
Demonstrates how to access and select applicable evidence	Identifies and applies the best available evidence to guide diagnostic workup of simple cases	Identifies and applies the best available evidence to guide diagnostic work-up of complex cases	Critically appraises and applies evidence to guide care, even in the face of conflicting data	Teaches others to critically appraise and apply evidence for complex cases; and/or participates in the development of guidelines	
Aware of the need for patient privacy, autonomy, and consent as applied to clinical research	Develops knowledge of the basic principles of research (demographics, Institutional Review Board, human subjects), including how research is evaluated, explained to patients, and applied to patient care	Applies knowledge of the basic principles of research such as informed consent and research protocols to clinical practice, with assistance	Proactively and consistently applies knowledge of the basic principles of research such as informed consent and research protocols to clinical practice	Suggest improvements to research regulations and/or substantially contributes to the primary literature through basic, translational, or clinical research	
Comments:			Not Yet (Completed Level 1	

Level 1	Level 2	Level 3	Level 4	Level 5
Accepts responsibility for personal and professional development by establishing goals	Demonstrates openness to receiving performance data and feedback in order to inform goals	Seeks performance data and feedback with humility	Actively and consistently seeks performance data and feedback with humility	Models seeking performance data with humility
Identifies the gap(s) between expectations and actual performance	Analyzes and reflects on the factors which contribute to gap(s) between expectations and actual performance	Institutes behavioral change(s) to narrow the gap(s) between expectations and actual performance	Critically evaluates the effectiveness of behavioral changes in narrowing the gap(s) between expectations and actual performance	Teaches others reflective practice
Actively seeks opportunities to improve	Designs and implements a learning plan, with assistance	Independently creates and implements a learning plan	Uses performance data to measure the effectiveness of the learning plan and improves it when necessary	Facilitates the design and implementing learning plans for others

Level 1	Level 2	Level 3	Level 4	Level 5
Demonstrates knowledge of the ethical principles underlying informed consent, surrogate decision making, advance directives, confidentiality, error disclosure, stewardship of limited resources, and related topics	Analyzes straightforward situations using ethical principles	Recognizes the need and uses appropriate resources to seek help in managing and resolving complex ethical situations	Independently resolves and manages complex ethical situations	Identifies and seeks to address system-level factors that induce or exacerbate ethical problems or impede their resolution
Describes when and how to appropriately report professionalism lapses, including strategies for addressing common barriers; identifies and describes potential triggers for professionalism lapses	Demonstrates insight into professional behavior in routine situations; takes responsibility for own professionalism lapses	Demonstrates professional behavior in complex or stressful situations	Recognizes situations that may trigger professionalism lapses and intervenes to prevent lapses in self and others	Coaches others when their behavior fails to meet professional expectations

Professionalism 2: Accountability and Conscientiousness (AP/CP)						
Level 1	Level 2	Level 3	Level 4	Level 5		
Responds promptly to instructions, requests, or reminders to complete tasks and responsibilities	Takes appropriate ownership and performs tasks and responsibilities in a timely manner with attention to detail	Recognizes situations that may impact own ability to complete tasks and responsibilities in a timely manner and describes the impact on team	Anticipates and intervenes in situations that may impact others' ability to complete tasks and responsibilities in a timely manner	Takes ownership of system outcomes Designs new strategies to ensure that the needs of patients, teams, and		
				systems are met		
Comments:			Not Yet (Completed Level 1		

Professionalism 3: Self-A	Awareness and Help-Seekir	ng (AP/CP)		
Level 1	Level 2	Level 3	Level 4	Level 5
Recognizes limitations in the knowledge/skills/ behaviors of self or team, with assistance	Independently recognizes limitations in the knowledge/skills/ behaviors of self or team and seeks help when needed	Proposes and implements a plan to remediate or improve the knowledge/ skills/behaviors of self or team, with assistance	Independently develops and implements a plan to remediate or improve the knowledge/skills/ behaviors of self or team	Serves as a resource or consultant for developing a plan to remediate or improve the knowledge/ skills/behaviors
Recognizes status of personal and professional well-being, with assistance	Independently recognizes status of personal and professional well-being and seeks help when needed	Proposes and implements a plan to optimize personal and professional well- being, with assistance	Independently develops and implements a plan to optimize personal and professional wellbeing	Coaches others when responses or limitations in knowledge/skills do not meet professional expectations
Comments:			Not Yet (Completed Level 1

Interpersonal and Comm	unication Skills 1: Patient	and Family-Centered Comn	nunication (AP/CP)	
Level 1	Level 2	Level 3	Level 4	Level 5
Uses language and nonverbal behavior to demonstrate respect and establish rapport	Establishes a relationship in straightforward encounters using active listening and clear language	Establishes a relationship in challenging patient encounters, as appropriate	Easily establishes relationships, with attention to patient/family concerns and context, regardless of complexity	Mentors others in situational awareness and critical self-reflection to consistently develop positive therapeutic relationships
Identifies common barriers to effective communication (e.g., language, disability) while accurately communicating own role within the health care system	Identifies complex barriers to effective communication (e.g., health literacy, cultural)	When prompted, reflects on personal biases while attempting to minimize communication barriers	Independently recognizes personal biases while attempting to proactively minimize communication barriers	Models self-awareness while teaching a contextual approach to minimize communication barriers
Identifies the need to adjust communication strategies based on assessment of patient/family expectations and understanding of their health status and treatment options	Organizes and initiates communication with patient/family by introducing stakeholders, setting the agenda, clarifying expectations and verifying understanding of the clinical situation	Sensitively and compassionately delivers medical information, elicits patient/family values, goals and preferences, and acknowledges uncertainty and conflict, with guidance	Independently, sensitively, and compassionately delivers medical information, elicits patient/family values, goals and preferences, and acknowledges uncertainty and conflict	Models shared decision making in patient/family communication including those with a high degree of uncertainty/conflict
Comments:			Not Vot (Completed Level 1
			inot yet C	Completed Level 1

Level 1	Level 2	Level 3	Level 4	Level 5
Uses language that values all members of the health care team	Communicates information effectively with all health care team members	Uses active listening to adapt communication style to fit team needs	Coordinates recommendations from different members of the health care team to optimize patient care	Models flexible communication strategies that value input from all health care team members, resolving conflict when needed
Describes the utility of constructive feedback	Solicits feedback on performance as a member of the health care team	Integrates feedback from team members to improve communication	Communicates feedback and constructive criticism to superiors	Facilitates regular health care team-based feedback in complex situations

Level 1	Level 2	Level 3	Level 4	Level 5
Safeguards patient personal health information by communicating through appropriate means as required by institutional policy (e.g., patient safety reports, cell phone/pager usage)	Appropriately selects forms of communication based on context and urgency of the situation	Communicates while ensuring security of personal health information, with guidance	Independently communicates while ensuring security of personal health information	Guides departmental or institutional communication around policies and procedures regarding the security of personal health information
Identifies institutional and departmental structure for communication of issues	Respectfully communicates concerns about the system	Uses institutional structure to effectively communicate clear and constructive suggestions to improve the system	Initiates conversations on difficult subjects with appropriate stakeholders to improve the system	Facilitates dialogue regarding systems issues among larger community stakeholders (institution, health care system, field)
Comments:				